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| 10/529,388 | 03/28/2005 | Sukyoung Chun | 1003-1001 | 6736 |
| <div>466 7590 09/09/2008</div> <div>YOUNG & THOMPSON</div> <div>209 Madison Street</div> <div>Suite 500</div> <div>ALEXANDRIA, VA 22314</div> | | | | |
| <div>EXAMINER</div> <div>SULLIVAN, DANIELLE D</div> | | | | |
| <div>ART UNIT PAPER NUMBER</div> <div>1616</div> | | | | |
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/529,388

Applicant(s)

CHUN, SUKYOUNG

Examiner

DANIELLE SULLIVAN

Art Unit

1616

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 April 2008.
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 9 and 11-17 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 9 and 11-17 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☒ The drawing(s) filed on 28 March 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/S508)
Paper No(s)/Mail Date _____
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____

DETAILED ACTION

Claims 9 and 11-17 are pending. Claims 11-17 were added in an amendment filed 4/28/2008.

Withdrawn rejections

Applicant's amendments and arguments filed 4/28/2008 are acknowledged and have been fully considered. Any rejection and/or objection not specifically addressed below are herein withdrawn.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 9 and 11-17 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The invention is disclosed as 'a method of manufacturing a wood chip' and there is no disclosure of a 'method of using a wood chip'.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 9 and 11-17 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The recitation of "mixing at different rates of fertilizer, pesticide or plant growth regulator according to the crops demand" in claim 9 is indefinite. First, the rates are not disclosed in the specification. Second, it is unclear if applicant is seeking to recite a Markush group selected from a fertilizer, pesticide or plant growth regulator.

Claim 9 recites the limitation "the crops demand" in reference to the wood chips. There is insufficient antecedent basis for this limitation in the claim.

Claim 11 recites the limitation "mixing the treated wood chips permeated having different fertilizers" in reference to the wood chips . There is insufficient antecedent basis for this limitation in the claim.

Claim 15 recites the limitation "a pit in a plant cell wall" in reference to the wood chips. There is insufficient antecedent basis for this limitation in the claim.

Claim 16 recites a Markush group but the species are not in the alternative "or" form and therefore makes the claim indefinite.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 9, 11-17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Renwick (US 3,034,882) in view of Reeb (Drying Wood, 1999).

Applicant's Invention

Applicant claims a method of using a wood chip by:

- a) manufacturing a wood chip;
- b) drying the wood chip to 10-40% water content;
- c) permeating more than one of a fertilizer, pesticide or plant growth regulator into the wood chip by a pressurized or immersion method;
- d) mixing different kinds of wood according to crops or diseases and insects. Claim 13 specifies the pressurized method is performed at room temperature at a pressure of 1-40 kgf/cm³(14-569 p.s.i.) in a vacuum. Claim 14 requires the wood chip is 5mm thick, 25mm wide and 30mm long. Claim 16 specifies that the wood is from the pine, larch, heartwood, sapwood, Quercus or Populus variety.

Determination of the scope and the content of the prior art

(MPEP 2141.01)

Renwick teaches a method of treating wood chips with organic fertilizers, compounds of nitrogen, phosphorus, potash or other plant nutrients may be combined by impregnating the wood chip with the chemicals (column 1, lines 8-29). The fertilizer impregnated wood may be encased (encapsulated) in a soluble coating which slows down the breakdown due to weathering, water and time (column 2, lines 9-13). The wood chips are first manufactured from logs, lumber, etc. (step a)) and the preferred size is approximately 6mm X 19 mm X 6mm, however size is open to vary as long as not less than 6mm (column 2, lines 26-35). The wood chips are thoroughly dried by the extraction of all moisture by heating the chips in a roaster, oven or drier (step b)), however, Renwick teaches that in some instances it may be desirable to drive off only the free water, which leaves the cell walls saturated (column 2, lines 57-72). While wood chips are still hot they are ready to be impregnated with the desired chemicals (step c)) (column 3, lines 1-5). Forced evacuation and impregnating under pressure (pressurized) provides more ideal product (column 3, lines 35-37). However, other means can be used such as placing chip in a rotating drum and immersing the hot chips in cold solution (column 3, line 66 thru column 4, line 4). There is not limitation on a particular species of wood useable (column 2, lines 26-27). Pine may be used (column 2, lines 14-19). The drying process can be improved by agitating and heating the wood chips within a vacuum followed by injection of the fertilizer solution at a pressure of 40-200 p.s.i. (column 3, lines 25-34).

Ascertainment of the difference between the prior art and the claims

(MPEP 2141.02)

Renwick does not teach drying the wood chip to 10-40% water content or air drying. It is for this reason that Reeb is joined.

Reeb teaches that when air drying wood the final moisture content is determined by ambient air temperature, relative humidity and drying time. Air drying wood can bring the MC (moisture content) down to a range of 20 to 30% depending on outside conditions, lumber species, size and may take up to a year or more (paragraph 9, pages 4-5). As wood dries below 30% MC strength increases and wood is less susceptible to insect damage (paragraph 1, page 1). Therefore, the fact that air drying was known to bring the moisture content to a range of 20-30% in view of KSR International Co. v. Teleflex Inc., 82 U.S.P.Q.2d 1385, 1395 (2007), it would have been obvious to try the step of air drying in the method of manufacturing a wood chip to obtain the specified moisture content range.

Finding of prima facie obviousness

Rationale and Motivation (MPEP 2142-2143)

It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the teachings of Renwick and Reeb to further include the step of air drying to 10-40% water content. One would have been motivated to include air drying the wood chips because Reeb teaches that a MC from 20-30% can be obtained by air drying and that a MC of less than 30% increases the strength and therefore overall durability of wood. Furthermore, one would have been motivated to manipulate ranges during routine experimentation to discover the optimum or workable moisture

content range since Reeb provides the general range. Therefore, one would have been motivated to use air drying to obtain a moisture content range from 10-40%.

Response to Arguments

Applicant's arguments filed 4/28/2008 have been fully considered but they are not persuasive..

In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, Applicants believe that Renwick cannot be combined with Reeb to yield the predicted results. The Examiner disagrees with this viewpoint.

The fact that Renwick teaches the use of a rotary dryer whereas Reeb teaches air drying for the manufacture of wood products clearly shows that wood is known to be dried by a both means. Therefore, the fact that air drying was known at the time of invention to dry wood does not denote patentability of the present claims because in view of KSR International Co. v. Teleflex Inc., 82 U.S.P.Q.2d 1385, 1395 (2007), it would have been obvious to combine a known method of drying wood, such as air drying in a method of manufacturing wood chips.

Furthermore, the method yields predictable results because a moisture content below 30% moisture content is known to exist in dried wood and Reeb teaches that this moisture content increase strength of the wood product. Therefore, the fact that Reeb teaches the limitation in the moisture content provides motivation to combine the teaching in a method of manufacturing a wood chip as taught by Renwick.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DANIELLE SULLIVAN whose telephone number is (571)270-3285. The examiner can normally be reached on 7:30 AM - 5:00 PM Mon-Thur EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Johann Richter can be reached on (571) 272-0646. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Danielle Sullivan
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